



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,680	08/31/2001	Robert Dayton Sigler	18180.0187	9302

23517 7590 01/15/2003

SWIDLER BERLIN SHEREFF FRIEDMAN, LLP  
3000 K STREET, NW  
BOX 1P  
WASHINGTON, DC 20007

EXAMINER

FINEMAN, LEE A

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/942,680

Applicant(s)

SIGLER ET AL.

Examiner

Lee Fineman

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/27/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 12-17, 27-29 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 18-26, 30-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Invention I and Species I in Paper No. 5 is acknowledged. Applicant stated that claims 1-11 and 18-26 read on the elected invention and species. However, non-elected process claims 30-32 are clearly directed to structural features of the apparatus in elected Invention I and Species I. Accordingly, claims 1-11, 18-26 and 30-32 are believed to read on the elected invention and species and will be examined on the merits as follows.

2. Claims 12-17 and 27-29 and 33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the optical element (30) as a reflective element or a diffractive element must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

4. Claim 18 is objected to because of the following informalities: In line 5, "iimage" should be --image--. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 6, 10-11, and 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Pasternak, U.S. Patent No. 5,661,610.

Regarding claims 1-2, 4, 6, and 30-31, Pasternak discloses an apparatus in a multiple aperture optical system (fig. 1) comprising an optical element (M3) disposed substantially at an intermediate image generated by the optical system (column 2, lines 63-66) wherein the optical element is a reflective element and the system includes a flat fold mirror (M0) having a perforation (10) and the optical element is disposed within the perforation of the flat fold mirror. The method of utilizing the structure of the claim is inherent therein. The recitation "for correcting sine magnification error" has not been given significant patentable weight because the recitation occurs in the preamble where it merely recites the intended use of a structure and fails to structurally limit the body of the claim.

Art Unit: 2872

Regarding claims 3 and 32, Pasternak shows in fig. 2 a zero-power optical element located substantially at the intermediate image.

Regarding claims 10 and 11, Pasternak further discloses wherein the optical element is within about 50 millimeters of an intermediate image (fig. 1). The other features of the optical system are seen as intended use, which fail to limit the optical element of the present invention in a structural manner.

7. Claims 1-2, 6-11, and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Sinclair et al., U.S. Patent No. 5,940,222.

Regarding claims 1-2, 4, 6-9, and 30-31, Sinclair et al. discloses an apparatus in a optical system (fig. 7) comprising an optical element (L1b) disposed substantially at an intermediate image generated by the optical system (II) wherein the optical element is a refractive element having a flat surface and a corrector surface (fig. 8) wherein the corrector surface is defined by the rotationally symmetric polynomial of the general form  $z = (cy^2/1 + \sqrt{1 - (k+1)c^2y^2}) + Dy^4 + Ey^6 + Fy^8 + Gy^{10}$  (see table III). The method of utilizing the structure of the claim is inherent therein. The recitation "for correcting sine magnification error in a multiple aperture optical system" has not been given significant patentable weight because the recitation occurs in the preamble where it merely recites the intended use of a structure and fails to structurally limit the body of the claim. Sinclair et al. meets all of the structural limitations required by the claim in support thereof.

Regarding claims 10 and 11, Sinclair et al. further discloses wherein the optical element is within about 50 millimeters of an intermediate image (fig. 7). The other features of the optical

Art Unit: 2872

system are seen as intended use, which fail to limit the optical element of the present invention in a structural manner.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pasternak.

Pasternak further discloses wherein the optical system is a three-mirror telescope (M1, M2, M3) but is silent as to whether it is an anastigmat telescope. It is well known in the art that three-mirror anastigmat telescopes are used to correct for astigmatism. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the telescope of Pasternak to be a three-mirror anastigmat telescope to correct for astigmatism.

10. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pasternak in view of Duncan et al., U.S. Patent No. 5,905,591.

Pasternak discloses the claimed invention except for the multiple aperture optical system comprising a plurality of collector telescopes. Duncan et al. teaches a multiple aperture optical system with a plurality of collector telescopes (fig. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical system of

Art Unit: 2872

Pasternak to one with a plurality of collector telescopes as suggested by Duncan et al. to provide improved image resolution of complex extended scenes (Duncan et al., column 3, lines 19-20).

11. Claims 18-21, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair et al. in view of Duncan et al., U.S. Patent No. 5,905,591.

Sinclair et al. discloses the claimed invention except for the optical system comprising a plurality of collector telescopes. Duncan et al. teaches an optical system with a plurality of collector telescopes (fig. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical system of Sinclair et al. to one with a plurality of collector telescopes as suggested by Duncan et al. to provide improved image resolution of complex extended scenes (Duncan et al., column 3, lines 19-20).

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Braunecker et al., U.S. Patent No. 6,426,834 B1 and Cook, U.S. Patent No. 5,550,672 discloses optical systems with a corrector element.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (703) 305-5414. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the

Application/Control Number: 09/942,680

Page 7

Art Unit: 2872


organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



LAF

January 8, 2003

  
**MARK A. ROBINSON**  
**PRIMARY EXAMINER**